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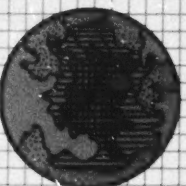
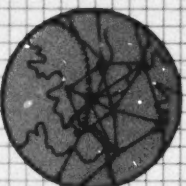
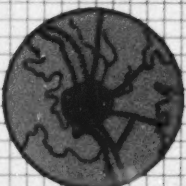
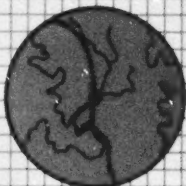
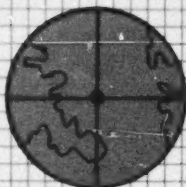
DESCRIPTORS *Course Content; Course Objectives; Curriculum Development; Educational Change; Elementary Secondary Education; *Geographic Concepts; *Geography Instruction; Global Approach; Guidelines; Outcomes of Education; *Sequential Approach

ABSTRACT

Intended as a current statement for improving geographic education, these guidelines suggest major changes needed to counteract a prevailing illiteracy in geography among U.S. citizens. A preface and problem statement provide a rationale for including geography education as a subject of study in the schools and as a scientific mode of inquiry. A section on the content and process of geographic education (1) demonstrates how geographic education focuses on five central themes (location, place, relationships within places, movement, and regions), how these themes recur and are amplified throughout the curriculum, and how they should be represented in the various levels of our schools; (2) suggests how schools can integrate these themes; (3) identifies the knowledge, skills, and perspectives students should gain from a systematic program in geographic education; and (4) suggests a variety of approaches to geography that each theme might imply. The following section, "The Place of Geography in the Curriculum," deals with the value of geographic inquiry, geography's relationship to other subjects, and geography as preparation for a career. In the next section, a chart depicting the role and sequence of geography education in the elementary school presents central foci and suggested learning outcomes by grade level. A suggested pattern of course offerings and sequence for geographic education in the secondary school is followed by an outline of skills to be included in high school geography courses and a list of learning outcomes arranged according to the five basic themes identified earlier in the guidelines. (LH)

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Guidelines for Geographic Education

ELEMENTARY AND SECONDARY SCHOOLS

Approved by the Joint Committee on
Education of the
National Council for Geographic Education
and the
National Association of Geographers

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ACKNOWLEDGEMENTS

The Guidelines for Geographic Education are the fruit of a joint venture of the National Council for Geographic Education (NCGE) and the Association of American Geographers (AAG). These two professional organizations represent the most influential geographic educators and geographers in the United States and Canada.

In April of 1982 at a joint meeting of the Executive Committees of the NCGE and the AAG in San Antonio, Texas the presidents of these respective organizations, Gary A. Manson of Michigan State University and Richard L. Morrill of the University of Washington set in motion the preliminary plans for the guidelines. Later that year at another joint meeting in San Diego, California, NCGE President Richard G. Boehm of Southwest Texas State University and AAG President John S. Adams of the University of Minnesota established a pilot project to be headed by Adams for developing a preliminary set of guidelines with a group of geography teachers and social studies educators from the state of Minnesota.

In October 1983 in Ochos Rios, Jamaica, the Executive Committees of the NCGE and AAG constituted the guidelines committee with Salvatore J. Natoli of the AAG as chair, with Richard G. Boehm, James Kracht of Texas A & M, David Lanegran of Macalester College, Janice Monk of the University of Arizona, and Robert Morrill of Virginia Polytechnic Institute and State University as committee members. After several meetings and numerous revisions the guidelines achieved their present form.

The committee views these guidelines as a current statement for improving geographic education in the United States. These guidelines should evolve and develop as geography becomes established as an integral and dynamic part of the curriculum in our nation's schools.

Many other individuals deserve recognition for the parts they played in developing these guidelines, as reviewers, critics, contributors, and suppliers of background materials. Among these were: Joseph M. Cirincione, University of Maryland College Park; Jerry Croft, Oklahoma State University; A. David Hill, University of Colorado, Boulder; John Fraser Hart and Phil Gersmehl, University of Minnesota; Robert Marcotte, Anoka-Hennepin School District, Minnesota; Roger Wangen, Minnesota Department of Education; Eugene J. Kinerney, University of the District of Columbia; Fredric A. Ritter, Morgan State University; Christopher L. Salter, University of California, Los Angeles offered helpful advice, valuable stylistic and substantive commentary, and made numerous presentations among school teachers; James Marran, New Trier High School West, Northfield, Illinois; Victor Konrad, University of Maine at Orono; Keith A. Smith, Maryville High School, Maryville, Missouri; Alice C. Andrews, George Mason University; Gordon Oosterrjan, Middletown Christian School, Pennsylvania; Vincent P. Gutkowski, Eastern Illinois University; Dan B. Fleming, Virginia Polytechnic Institute and State University; Michael Libbee, Central Michigan University; Mamie L. Anderzhon, Shenandoah, Iowa; Robert H. Saveland and Marion I. Rice, University of Georgia; James L. Sellers, Montgomery County Public Schools, Virginia; Laurel Singleton, Graphic Learning Corporation, Boulder, Colorado; William R. Strong, University of North Alabama; Ruth I. Shively, Indiana University of Pennsylvania; Gail Gerlach, Indiana University of Pennsylvania University School; Stephen S. Birdsall, University of North Carolina, Chapel Hill; Mark S. Monmonier, Syracuse University; Mary I.

Raley, Mechanicsville, Maryland; Doug Phillips, Anchorage, Alaska School District; and Reyn Du Bois, Scottsdale, Arizona.

Members of the NCGE Executive Committee who also contributed during their terms of office were: Gary A. Manson, Richard G. Boehm, Walter Kemball, Education Centre, Etobicoke, Ontario who also provided a wealth of Canadian curriculum materials and continuous encouragement and wise counsel; Gail S. Ludwig, University of Missouri, Columbia; Byron S. Augustin, Southwest Texas State University; Douglas G. MacLeod, Ministry of Education, London, Ontario; Charles F. Gritzner who also contributed extremely perceptive reviews and suggestions; and James W. Vining, Executive Director, NCGE, Western Illinois University.

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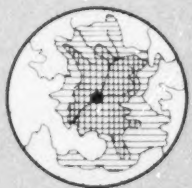
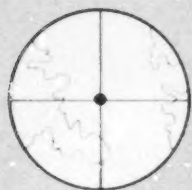
AAG Executive Committee members contributing during their terms of office were: Richard L. Morrill, John S. Adams, Peirce F. Lewis, Pennsylvania State University; Julian V. Minghi, University of South Carolina; Risa I. Palm, University of Colorado, Boulder; Barbara Z. Borowiecki, University of Wisconsin-Milwaukee; Leon C. Haliman, Stephen F. Austin State University; Ronald F. Abler, National Science Foundation. Members of the NCGE Executive Board and the AAG Council also provided constructive comments and encouragement.

Every staff member of the AAG Central Office also became involved in various ways in developing these guidelines. Patricia J. McWethy, Executive Director until 1984 permitted the chair to devote long hours to the task, provided constant support and encouragement, as well as perceptive comments and reviews. Robert T. Aangeenbrug, current Executive Director, assisted in many valuable ways; Barbara Zimmann and Elizabeth Beetschen contributed their editorial and secretarial skills. Terry Mulloy typed and edited the original proposal and Patricia McKenna kept track of expenses.

We owe a significant debt of gratitude for the unstinting work of the committee who served well beyond and above the call of duty. The committee members juggled their schedules to spend long hours at meetings and review sessions. They contributed generously of their time, made important suggestions, presented perceptive reviews, supplied background materials, and most importantly honored deadlines and kept the work focused on the long-range objectives. To Richard G. Boehm, James Kracht, David Lanegran, Janice Monk, and Robert Morrill, we thank you again and again.

Finally, the National Council for Geographic Education and the Association of American Geographers provided the funding for meetings of the joint committee. The AAG provided staff time for the work of the chair and for preparing the numerous drafts of the guidelines. The Gildea Foundation made a generous grant for the printing and distribution of these guidelines. Support such as this made it possible for the Committee to complete its work on schedule.

Salvatore J. Natoli
Association of American Geographers
Washington, D.C.



Guidelines for Geographic Education

ELEMENTARY AND SECONDARY SCHOOLS

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Preface

"For the United States to cope successfully with its own domestic problems and to participate effectively in world affairs, its leaders and citizens must have a coherent understanding of the earth's regions and peoples. In the United States, most educational programs today have failed utterly to provide such a structured knowledge of the world. To counteract the prevailing geographical illiteracy, major changes need to be made in pre-college programs and in technical and professional training . . ."¹ The foregoing statement made almost two decades ago still prevails.

In 1983 the *Dallas Times Herald* administered tests in geography, science, and mathematics to twelve year olds in eight highly industrialized nations. The results indicated that American students ranked a weak fourth among students taking the geography examination. Among one group of American students taking the test more than twenty percent could not locate the United States on a world map and over twenty percent incorrectly identified Brazil as the United States.

College students fare little better. In a recent survey of global understanding by the Educational Testing Service among more than 3000 undergraduates in 185 American two- and four-year institutions, the mean score for the entire student sample was 42.93 out of a possible 101.

"To deal effectively with the multiplicity of problems we face in this shrinking world requires an increasing *international competence*. To maintain and increase this competence means the education and preparation of an ever-increasing number of Americans who understand other peoples and societies well enough to be able to work effectively with them on a broad range of economic, political, and security issues."²

It is a serious problem when our students fail to achieve a minimum standard of competency in global understanding. It is *more* serious when we overlook these deficiencies in our educational system. It is *critical* when we formulate national policies that rely on imprecise information and unclear interpretations about our own geography and that of other nations.

Geographic education alone cannot remedy these deficiencies nor can it resolve important international problems. However, training in geography gives us unique perspectives about places and their relationships to each other over time. It is an essential ingredient in the total process of educating informed citizens.

¹The Geography in Liberal Education Project Report, Association of American Geographers, *Geography in Undergraduate Liberal Education*, Washington, D.C. 1965, p. 1.

²Commission on International Education, American Council on Education, *What We Don't Know Can Hurt Us*, Washington, D.C., 1984, p. 2.

The Problem

Americans' ignorance of their own country and of the world will have dire consequences for our nation's welfare, strength, and global interdependence and for the effects we have on people in other nations. Geographic education is vital to correct this ignorance and can give future generations the knowledge and understanding they need to manage the earth's resources wisely.

Every day we make important decisions about our well-being and every day we use geographic knowledge or encounter important geographical influences on our lives. We interpret complicated geographical factors to determine the places where we choose to live—physical characteristics such as climate, topography, and drainage influence where we can build safe, secure, and desirable housing; cultural factors, such as quality housing and schools, convenient transportation routes to work and for leisure—all have a bearing on our quality of life.

In the United States we differentiate our industrial patterns or population redistribution problems according to Frost Belt or Sun Belt characteristics, although these are ambiguous regional entities based loosely on climatic factors. Our very livelihoods depend upon products, ideas, and even weather and climate that originate great distances from where we live and work. In a democracy the development of compassionate and effective public policies depends upon active participation of citizens who are broadly educated about their own society and its relations with the entire world. All events affecting society occur within a geographic context. To understand these events fully we must subject them to geographic scrutiny.

Some of these problems include suburban development encroaching onto primary agricultural land; increasingly congested highways falling into disrepair while metropolitan public transit systems are facing financial collapse; protecting watershed areas from erosion and pollution; and guaranteeing zoning decisions that promote environmentally sound land use development.

Many other serious or potentially serious problems have geographical implications. Geographic knowledge is crucial in dealing with issues such as nuclear armament buildups, siting nuclear power plants, safe disposal of radioactive and toxic chemicals, segregation by race, age, or economic status, discrimination against women and minorities, and inequitable distribution of economic resources in and among developed and developing countries. Careful geographic scrutiny can benefit the analysis of problems of environmental degradation, rational use of ocean resources, the resettlement of refugees from war-torn nations, and political repression and terrorism. Major policies formulated and carried out by governments and large corporations usually have impacts that reach around the globe.

We must strive to understand how the actions of our society influence other societies and how their actions affect us. A sound geographic education provides the perspectives, information, concepts and skills to understand ourselves, our relationship to the earth and our interdependence with other peoples of the world. It reinforces and extends the process of critical thinking and problem solving that are applicable to all parts of the curriculum. We must know *where* and *why* events

are occurring if we hope to apply our intelligence and moral sensitivity toward improving the quality of human life on this planet.

Geographic education can satisfy our deep need to know about other people and places, the natural environment, the capacity of the earth to support human life, and to inform our own individual perception of places. Thus geographic education requires knowing *where* things are located, but more importantly requires a system for inquiring *why* they are there and *where they should be*.

The Method of Geographic Inquiry

As a subject for study in the schools and as a scientific mode of inquiry, geography provides an effective method for asking questions about places on the earth and their relationships to the people who live in them. It involves a pattern of inquiry that *begins* with two essential questions: *Why* are such things located in those particular places and *how* do those particular places influence our lives? These two essential questions lead us to understandings and explanations of how and why the world in which we live can support us now and in the future.

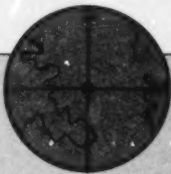
The first task in geography is to locate places, describing and explaining their physical (natural) and human characteristics. Geographic inquiry continues by exploring the relationships that develop as people respond to and shape their physical and cultural environments. It permits us to compare, contrast, and comprehend the regions of the world and its various physical and human features and patterns. This knowledge helps us to manage the world's resources and to analyze a host of other significant problems in terms of the *spaces* they occupy and how these spaces interact with each other on the earth's surface. In approaching problems geography examines regions locally, nationally, and globally. With such regional knowledge we enhance our appreciation of cultural and environmental diversity and gain significant perspectives on human activities.

Geographers use many research tools. They are, in some cases, similar to other social and physical science methods, but geographers have special expertise in using maps to portray and study a variety of locations and distributions. Reading, interpreting, and making maps are skills integral to geographic education and to acquiring geographic knowledge. Geographic inquiry also requires using and understanding a variety of data sources such as the census, data gathered from field work and questionnaires, and information compiled from aerial photography or remotely sensed images. Basic and advanced skills in mathematics ease the compilation and analyses of these data.

Content and Process of Geographic Education

Now, more than ever, citizens of the United States can ill afford to ignore their own lack of geographical understanding or that of the rest of the world. This document will show how we might counteract such educational negligence. First, it will demonstrate how geographic education focuses on five central themes (location, place, relationships within places, movement, and regions), how these themes recur and are amplified throughout the curriculum, and how they should be represented in the various levels of our schools. Second, it will suggest how schools can integrate these themes into their organized program of studies. Third, it will also identify the knowledge, skills, and perspectives students should gain from a systematic program in geographic education. Fourth, it will suggest a variety of approaches to geography that each theme might infer—regional, systematic, or problem oriented.

Fundamental Themes in Geography



LOCATION:

Position on the Earth's Surface

Absolute and relative location are two ways of describing the positions of people and places on the earth's surface.

Absolute Location: From one perspective we can identify locations as precise points on the earth's surface by using an arbitrary, mathematical grid system of latitude and longitude. The coordinates of latitude and longitude are widely accepted and useful ways of portraying exact locations. This locational system aids us in measuring distances and finding directions between and among places on the earth's surface. The system is reliable because the positions of the earth's land masses and water bodies have changed little during recorded history.

Relative Location: Knowledge of locations and their characteristics is a key aspect of understanding interdependence at local, regional, national, and global scales. For example where are schools located and why? Do the locations anticipate population growth or decline? Of equal importance is determining the precise locations of petroleum deposits critical to fulfilling the world's energy needs. The discovery of an oil field changes that location's relationship to many widely scattered places. The multitude of locations linked by the flows of oil in pipelines, ocean tankers, and trucks demonstrates how continued operation of

Content and Process of Geographic Education—CONTINUED

the world's factories, farms, and cities depend upon global energy interdependence. Discovery or development of radically different energy sources would alter the relationships among oil producers and oil users. Changes in the relationships between locations would soon follow. Similar examples abound for food, water, and other basic goods required to sustain life.

Each human group depends upon people and things from distant locations. The ways we perceive our own and other locations will deeply influence our lives. Thus in learning to differentiate between sites (locations) and situations (places) we come closer to understanding the significance of their differences and similarities around the world.



PLACE: Physical and Human Characteristics

All places on the earth have distinctive tangible and intangible characteristics that give them meaning and character and distinguish them from other places. Geographers generally describe places by their physical or human characteristics.

Physical Characteristics: The physical characteristics derive from the geological, hydrological, atmospheric, and biological processes that produce landforms, water bodies, climate, soils, natural vegetation, and animal life.

Human Characteristics: Human ideas and actions shape the character of places. Places vary in their population composition, as well as in their settlement patterns, architecture, kinds of economic and recreational activities, and transportation and communication networks. One place also can be distinguished from another by the ideologies and philosophical or religious tenets of people who live there, their languages, and by their forms of economic, social, and political organization.

Observed Characteristics: Few places on the earth have been untouched by human contact, even sparsely settled or largely uninhabited areas such as the ice sheets of Antarctica, the Grand Canyon of Arizona, and the seemingly impenetrable tropical rainforests of the Amazon Basin. All have landscapes shaped in part by human activity. In contrast, cities represent the most intensive human modification of the physical environment. But the predominant physical or

natural characteristics often mask a history of intensive human use. For example, the uninformed observer apparently sees an extensive virgin forest in north central Pennsylvania where late nineteenth century photographs show nothing but stumps of trees cut down to support tunnels in the nearby bituminous coal mines.

People perceive characteristics of places according to their own experiences or points of view. For example, the Central American isthmus is a tropical, mountainous region connecting North and South America; a region beset with political and social turmoil; an active volcanic region; a source of tropical agriculture products; a blend of Hispanic and Indian cultures; a collection of small, independent nations; examples of Third World development in the Western Hemisphere; or a source of current or potential difficulties in American foreign policy.

Taken together, the physical and human characteristics of places provide keys to identifying and interpreting the simple to complex interactions and interrelations between people and their environments.



RELATIONSHIPS WITHIN PLACES: Humans and Environments

All places on the earth have advantages and disadvantages for human settlement. High population densities have developed on flood plains, for example, where people could take advantage of fertile soils, water resources, and opportunities for river transportation. By comparison, population densities are usually low in deserts. Yet flood plains are periodically subjected to severe damage, and some desert areas, such as Israel, have been modified to support large population concentrations.

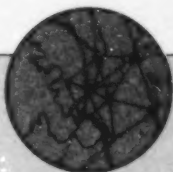
Cultural and Physical Relationships: People continue to modify or adapt to natural settings in ways that reveal their cultural values, economic and political circumstances, and technological abilities. Centuries ago Pueblo Indians developed agricultural villages that still endure in the deserts of the American Southwest. Later Hispanic and Anglo settlers established mines and mineral industries, cattle ranches, and farms in these deserts, relying increasingly on large

Content and Process of Geographic Education—CONTINUED

scale manipulation of water resources. Today, people perceive the clear skies, sunshine, and open spaces of the Southwest as especially suitable for resort and retirement development, military training and research, and as attractive amenities to recruit employees for high technology industries. All who have lived in that area have responded to the natural environment, but each group has adapted to and modified it in vastly different ways.

Geography focuses on understanding how such human-environment relationships develop and what their consequences are—for people and for the environment. Studying geography furthers our appreciation of the natural environment and of our cultural heritage. It also shows that our actions produce both intentional and unintentional consequences. Consider, for example, the effects of attempts to reduce property damage in areas of coastal California subjected to flooding and mudflows. These disasters follow winter rains and severe erosion from adjacent hills where forest fires frequently remove ground cover. Construction of dams and sediment traps has reduced damage, though at costs comparable to the value of the property saved. Side effects have been the reduction of sand supplied to beaches from the rivers and increasing rates of sea cliff erosion. New property losses have resulted and beaches are now maintained by hauling sand from other sites.

Studying the complex nature of such modifications provides an important foundation for promoting responsible environmental attitudes and behavior. It is also critical in training the professionals to whom we entrust environmental planning and management.



MOVEMENT: **Humans Interacting on the Earth**

Human beings occupy places unevenly across the face of the earth. Some live on farms or in the country; others live in towns, villages or cities. Yet these people interact with each other: that is, they travel from one place to another, they communicate with each other or they rely upon products, information, and ideas that come from beyond their immediate environment.

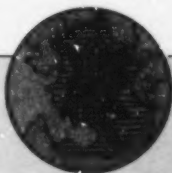
The most visible evidences of global interdependence and the interaction of places are the transportation and communication lines that link every part of the world. These demonstrate that most people

interact with other places almost every day of their lives. This may involve nothing more than a Georgian eating apples grown in the state of Washington and shipped to Atlanta by rail or truck. On a larger scale, international trade demonstrates that no country is self-sufficient.

Relationships Between and Among Places: Spatial interaction can be as simple as a child's morning bus trip from home to school or as complex as assembling wood from Oregon, natural rubber from Malaysia, graphite from Mexico, tin from Bolivia, and paint produced in factories around the United States to manufacture pencils in Pennsylvania.

In practical ways, geography helps to explain varied patterns in the movements of people, ideas, and materials. Planning for city transportation systems, tracing and explaining the diffusion of technological innovations, or suggesting alternative trading routes require geographical analyses and decisions that will improve the efficiency of movement between and among places. Geographers can analyze individual consumer travel patterns to improve retail locations, plan for allocating resources equitably by selecting the best sites for children's day-care or community health centers, and study human behaviors and needs in different regions of the earth to alleviate water resource conflicts.

Interaction continues to change as transportation and communication technologies change. We need to anticipate these changes and to examine their geographical and societal consequences.



REGIONS: How They Form and Change

The basic unit of geographic study is the region, an area that displays unity in terms of selected criteria.

We are all familiar with regions showing the extent of political power such as nations, provinces, countries, or cities, yet there are almost countless ways to define meaningful regions depending on the problems being considered. Some regions are defined by one charac-

teristic such as a governmental unit, a language group, or a landform type, and others by the interplay of many complex features. For example, Indiana as a state is a governmental region, Latin America as an area where Spanish and Portuguese are major languages can be a linguistic region, and the Rocky Mountains as a mountain range is a landform region. A geographer may delineate a neighborhood in Minneapolis by correlating the income and educational levels of residents with the assessed valuation or property and tax rate, or distinguish others by prominent boundaries such as a freeway, park, or business district. On another scale we may identify the complex of ethnic, religious, linguistic, and environmental features that delineate the Arab World from the Middle East or North Africa.

Geographers have developed regions as tools to examine, define, describe, explain, and analyze the human and physical environment. Geographers can delimit regions for specific purposes. Geographers in Texas interested in the future of their state have defined the "I-35 corridor" as a region of population growth and economic development lying between Austin and San Antonio. Geographers in the Federal government have delimited wilderness areas to be protected as much as possible from change by human activity.

Uses of Regions: Regions perform a multitude of functions in geographic education. They define both convenient and manageable units upon which to build our knowledge of the world. They provide a context for studying current events. We may view regions as an intermediate step between our knowledge of local places and our knowledge of the entire planet. Eventually they help us to see the earth as an integrated system of places that we can comprehend as a planetary ecosystem.

The Place of Geography in the Curriculum

The Distinctive Value of Geographic Inquiry: Geography belongs in every grade level of the curriculum. Ideally it should be a separate school subject. Its unique perspectives and skills gained from its five fundamental themes can clarify knowledge about the earth and its peoples, enrich the social sciences, history, and the humanities, and provide a spatial dimension to the physical sciences.

The study of geography:

- introduces and develops the concept of scale as a way of distinguishing different levels of generalization, organizes quantitative and qualitative data into meaningful units (regions) for analysis and generalization, and develops hypotheses about areas;
- requires gathering supporting evidence for problem identification and solution;
- suggests alternatives for future human settlement on the earth within the contexts of a variety of value and environmental systems;
- demonstrates through the use of maps the identification, definition, and interpretation of both simple and complex physical and human patterns on the earth's surface at a variety of scales;
- develops powers of observation in field work to record and organize complex phenomena; and
- most importantly, provides a physical and human context for understanding the complex interrelationships among regions of the earth.

Today, aided by the media's almost instantaneous coverage of news events around the world, we may gain the false perception that most of the world is in easy reach. Geography can help to reinforce the reality of distances of places from each other and of the size of regions from which we can derive realistic appraisals of world problems.

Geography's Relationship to Other Subjects: Geography helps to explain historical events, scientific processes, social organization, cultural development, political processes, and spatial relationships. Geography also provides students with the survival skills for understanding and coping with their own environment.

Geography as Preparation for a Career: Few students are aware that they can pursue geography as a profession. Studying geography equips students with the fundamental technical and practical knowledge and skills that eventually, after undergraduate and graduate study, prepare them for planning, research, or teaching careers in applied or academic geography. Geographic study also provides excellent preparation for allied fields such as surveying and mapping, remote sensing, geology, meteorology, business, urban or land use planning, managing economic development, and environmental analysis. The broad variety of themes encompassed in formal geographic study helps prepare a student for problem-solving roles in management and personnel work if the student is so inclined.

The Role and Sequence of Geographic Education

The primary role of geographic education is to present information and facts about the world; to introduce and reinforce the concepts of location, place, relationships within places, movement between and among places, and the region; to examine values and attitudes toward environments, and to sharpen intellectual and practical skills. Geographic education recognizes the pluralistic nature of our society and uses the unique American setting to enrich our education. Geographic inquiry promotes active questioning and fosters acquiring and using geography's organizing principles and skills. Citizens need such principles and knowledge to make personal and societal decisions about using environments wisely, resolving conflicts among competing values and groups, and learning to cooperate with people from different cultures.

Students bring to the classroom a wide range of incidental and systematic information about geography. Where possible, teachers should use students' prior learning in a program of geographic study. In their own fashion these students have learned how to find their way from place to place, have observed how their surroundings have changed, and have experienced how these changes have affected the sites, paths, boundaries, and cultural flavor of their daily activities.

Geography in the Elementary School

In the elementary grades geographic education offers children a unique opportunity to explore and understand their immediate life space as well as the more remote areas of the world in which they live. Children will acquire not only geographic knowledge but also will develop essential skills for gathering, interpreting, and portraying geographic information. Although geography is not commonly taught as a separate subject in grades K-6, important geographic understandings and skills must be incorporated into other parts of the curriculum.

The following guidelines, organized around the five themes previously noted identify both geographic concepts and learning outcomes that should be included in the elementary curriculum. Although the understandings, skills, and values identified in the learning outcomes can be most easily incorporated into the elementary social studies program, they are integral to other parts of the curriculum and should be reinforced and extended in such subjects as science, reading/language arts, and mathematics.

This section has been organized to suggest desired levels of achievement for two to three grade levels. This is by no means a rigid structure but it indicates how students should progress logically from concept to concept. Different schools may choose to emphasize different regions, systematic studies, or problems at the grade levels that are appropriate to their school's curricular structure and sequence.

Geographic instruction at the elementary level should be based not only on key geographic understandings, but also on our knowledge of stages of childrens'

cognitive, psychological, and social development. Thus the rich and varied life experiences of children should be used as much as possible to illustrate and develop the geographic understandings and skills selected for study.

KINDERGARTEN THROUGH SECOND GRADE

Geographic Concepts*

Suggested Learning Outcomes

Central Focus: Self in Space

Location (1, 2, 4, 5)

Characteristics of Place (3, 4, 5, 6)

1. Knows and uses terms related to location, direction and distance (up/down, left/right, here/there, near/far).
2. Recognizes a globe as a model of the earth.
3. Recognizes and uses terms that express relative size and shape (big/little, large/small, round/square).
4. Identifies school and local community by name.
5. Recognizes and uses models and symbols to represent real things.
6. Makes simple observations and describes weather, seasons, the school, the neighborhood, and the route to school and to home.

Central Focus: Homes and Schools in Different Places

Relative Location

(1, 2, 3, 5, 7, 8, 9, 10, 11)

Characteristics of micro environments

(1, 2, 4, 6, 8, 10, 11)

1. Knows geographic location of home in relation to school and neighborhood.
2. Knows the layout of the school campus.
3. Uses simple classroom maps to locate objects.
4. Identifies state and nation by name.
5. Identifies seasons of the year.
6. Describes characteristics of seasons and discusses their impact on people.
7. Follows and gives verbal directions (here/there, left/right).
8. Distinguishes between land and water symbols on globes and maps.
9. Relates location on map/globe to location on earth.

*Numbers in parentheses refer to suggested learning outcomes in the right hand column.

The Role and Sequence of Geographic Education—CONTINUED

KINDERGARTEN THROUGH SECOND GRADE

Geographic Concepts

Suggested Learning Outcomes

Central Focus: Neighborhoods—Small Places in Larger Communities

Location (1, 2, 3, 4, 8, 9)

Place (1, 2, 4, 5, 7, 9, 12)

Environmental changes (7)

Interdependence across space (10, 11)

Interaction within and between neighborhoods (10, 11)

Neighborhoods as regions with similarities and differences (9, 10, 11)

10. Describes similarities and differences among people in their own community.
11. Describes similarities and differences between people in their own community and in other places.
12. Observes, describes, and builds simple models and maps of the local environment.

1. Makes and uses simple maps of school and home neighborhoods.
2. Interprets map symbols using a legend.
3. Knows and uses cardinal directions.
4. Locates one's community, state, and nation on maps and globes.
5. Identifies local landforms.
6. Identifies a variety of types of transportation and communication within the community.
7. Describes effects of seasonal change on the local environment.
8. Differentiates between maps and globes.
9. Locates other neighborhoods studied on maps.
10. Explains that neighborhoods depend on other neighborhoods to satisfy their wants and needs.
11. Traces routes within and between neighborhoods using a variety of maps and models.
12. Compares pictures and maps of same area.

GRADES THREE AND FOUR

Geographic Concepts

Suggested Learning Outcomes

Central Focus: Community—Sharing Space With Others

Relative location (1)

Characteristics of landscapes (2, 3)

Environmental relationships (2, 5)

Interdependence and interaction within community (6, 7)

Community as a region (3, 8, 9)

1. Uses distance, direction, scale, symbols.
2. Prepares physical and human profile of community including ethnic diversity and some of the historical dimensions of this diversity.
3. Compares community with other communities.
4. Compares rural and urban environments.
5. Analyzes various environmental situations in terms of positive/negative consequences.
6. Describes how people depend on each other in communities including focus on children, adults, and elderly men and women.
7. Describes interaction in community in terms of transportation/communication.
8. Describes how community interacts with other communities and areas.
9. Determines the characteristics of a region and explains why the local community can be considered a region.

Central Focus: The State, Nation, and World

Location (1, 2, 3, 4, 5)

Nature and characteristics of places (4, 8, 14)

Interaction of the human and physical environments (8, 10, 11, 12)

Human interactions within and between the state, nation, and world (7, 9, 14)

Global interdependence (9, 11, 13, 14)

The nature of regions (6, 7, 9)

1. Interprets pictures, graphs, charts, and tables.
2. Works with distance, direction, scale and map symbolization.
3. Relates similarities and differences between maps and globes.
4. Uses maps of different scales and themes.
5. Recognizes the common characteristics of map grid systems (map projections).
6. Discusses how regions are defined and how the regional concept might be used.
7. Compares and contrasts regions on a state, national, or world basis.

The Role and Sequence of Geographic Education—CONTINUED

GRADES THREE AND FOUR

Geographic Concepts

Suggested Learning Outcomes

8. Locates and describes major geographical features and regions, and
9. Compares and contrasts them using case studies of countries having different peoples, cultures, and environments.
10. Notes how regions change through time.
11. Demonstrates how humans interact within and between the state, nation, and world.
12. Describes how people have adapted to and modified their environments in keeping with their values and understands how personal choices or behavior are related to conditions of people in other places (See outcome 9).
13. Examines the impact of technological advances on the human and physical environments.
14. Discusses how personal behavior could be changed to solve a particular environmental problem.
15. Discusses how people of the world are linked by transportation and communication and how they help fulfill each other's needs and are dependent on each other.
16. Recognizes the relationships between human activities and various locations, i.e., work, recreation, shopping, education, religion.

GRADES FIVE AND SIX

Geographic Concepts

Suggested Learning Outcomes

Central Focus: United States, Canada, and Mexico

Location (1, 2, 3, 4, 5, 8)

Comparative analysis of places
(2, 3, 4, 6, 7, 8, 15)

Quality of life (6, 7, 9, 13, 14, 15)

Human interaction in the U.S. with
Canada and Mexico
(6, 7, 8, 10, 14, 15, 16)

Physical and cultural regions of the
U.S., Canada, and Mexico
(7, 10, 11, 15, 16)

1. Recognizes distance, direction, scale, map symbols, and the relationship of maps and globes.
2. Works with latitude and longitude.
3. Uses maps, charts, graphs, and tables to display data.
4. Discusses location in terms of where and why.
5. Maps the correspondence between resources and industry.
6. Compares physical and cultural areas and regions within the U.S. with each other.
7. Maps physical and cultural regions in North America. Explains how these regions were outlined.
8. Identifies, locates, and describes well-known economic areas such as Pittsburgh, Atlanta, the Central Valley of California, etc.
9. Compares the quality of life in various regions (e.g. economic prosperity, including comparisons across age, sex, and ethnic groups).
10. Outlines regions within the U.S. and Canada on the basis of movement and concentrations of different cultural groups.
11. Compares and contrasts life in Anglo-America with life in Mexico and understands the interrelationships between these areas.
12. Positive and negative consequences of having other nations to the north and south of the United States.
13. Describes how there has been environmental deterioration in the U.S., Mexico, and Canada related to industrial growth and economic prosperity.
14. Discerns ways in which personal choices and public decisions influence environmental quality.

The Role and Sequence of Geographic Education—CONTINUED

GRADE FIVE AND SIX

Geographic Concepts

Suggested Learning Outcomes

Central Focus: Latin America, Europe, USSR, Middle East, Asia, and Africa

Location (1, 2, 3)

Physical and cultural geographic characteristics (4, 5, 10, 11, 12, 13)

Human-environmental interactions (6, 10, 11, 12, 13)

Spatial interrelationships (7, 8, 10, 11, 12, 13)

Regions and subregions of the world (9, 10, 11)

15. Identifies local, regional, national, and international problems that have geographic dimensions.
16. Comprehends how U.S., Mexico, and Canada grew into their present territorial areas.

1. Improves understanding of location, relative location, and the importance of location.
2. Uses maps, globes, charts, graphs.
3. Readily uses latitude, longitude, map symbols, time zones, and basic earth-sun relations.
4. Gains insights about the interaction of climate, landforms, natural vegetation, and other interactions in physical regions.
5. Uses cultural regions to study change in regions through time.
6. Examines human-land adaptations in difficult environments.
7. Perceives and analyzes migration patterns including rural to urban and between regions of different levels of development.
8. Maps trade routes, particularly those connecting developed and developing nations.
9. Divides several large regions such as the USSR or Africa into smaller regions based on race, language, nationality, religion or some other cultural characteristic.
10. Identifies important global problems with geographic dimensions, i.e., deforestation, desertification, pollution, overfishing, and offers suggestions for improvement. Does this for developed and developing nations.

GRADES FIVE AND SIX

Geographic Concepts

Suggested Learning Outcomes

11. Plots distributions of population and key resources on regional maps.
12. Examines relationships between personal and rational choices and their consequences for people in other world regions.
13. Explains problems with geographic dimensions. Suggests possible solutions.

Geography in the Secondary School

Geography in grades 7-12 should build upon, review, and reinforce the geographic concepts and suggested learning outcomes outlined for grades K-6. The educational patterns in secondary schools vary widely from state to state although all schools share certain common learning experiences and course sequences.

The following pattern of course offerings and sequences suggests a flexible progression of geographic education in the secondary schools. It is based upon some common course requirements in secondary education, relationships to other courses in the curriculum, the intellectual maturity of the students, and intended learning outcomes of a systematic sequence of geographic education.

Grade level	Courses	Course length	
7-9	State or Regional Geography	one semester	
7-9	World Geography (human/physical/regional)	two semesters	
8-10	Earth Sciences (contains a substantial component of physical geography)	two semesters	
8-10	Geography of the United States	one semester	
9-12	a. Environmental Geography b. Urban Geography c. Political Geography/Global Geographic Issues d. Historical/Cultural Geography e. Economic Geography f. Problems in Local Geography	at least one semester each of two of these courses	} two semesters
11-12	Honors Courses in Geography	one to four semesters	

Brief course descriptions follow. In each of these courses the skills and knowledge outlined on the following section should be attained according to the content, design, and level of sophistication of the particular course.

State or Regional Geography (one semester). Grades 7-9

A course in state or regional geography allows students to study places at an intermediate scale where they have opportunities to observe and examine problems that are of immediate as well as national and global significance. The course should emphasize human interaction with the environment, quality of life, and spatial interaction within the state or its regional setting. There should be an attempt to develop comparative analysis of areas within the state or region as well as between and within diverse populations. Key geographic elements will include knowledge of places and their locations, patterns of climate, landforms, flora and fauna, population, settlement patterns, transportation, and the economy. Subregional, state-wide, and regional problems that have geographic dimensions should form the basis for classroom discussions to help students understand how values and attitudes influence the definition and resolution of issues.

World Geography (two semesters). Grades 7-9

This course should help students discern the global patterns of physical and cultural characteristics such as earth-sun relationships, atmospheric and oceanic circulation, landforms, climate, population, transportation and communication, economic linkages, and cultural diffusion. The second semester should provide the opportunity to study the five basic geographic themes as they apply to selected regions and to the relationships between regions.

Regions selected for study will vary but should include case studies from each continent. These studies should be set in their regional context and exemplify important geographic concepts or problems. They may focus, for example, on human-environment relationships in the study of food supply in India or spatial interaction in the industrial development of Japan, in U.S.-Mexico relations, or cultural conflicts in the Arab world.

Earth Sciences (one semester). Grades 8-10

Themes in physical geography comprise a substantial proportion of the course content in earth science. Students will study processes shaping the physical environment: earth-sun relationships and energy flows, the hydrologic cycle, and tectonic and erosional processes as these relate to weather elements, landform and climate types, the geography of oceans, and make liberal use of maps and other physical geography data for geographical analysis.

United States Geography (one semester). Grades 8-10

A systematic and regional analysis will demonstrate the relationship of the geography of the U.S. to its development as a nation. Focus will include the characteristics of place, human interaction with the environment, spatial relationships, and the comparative analysis of subregions. Principal geographic elements include location, climate, landforms, vegetation patterns, population composition and distribution, settlement forms and patterns, transportation, resource location and management, industrial development and change, and agricultural land use. Timely subjects for discussion may include population shifts; unequal economic growth and regional disparities in unemployment, women's participation in the labor force, provision of public services, social justice, age or ethnic structures; agricultural organization and land use; and environmental amenities.

Environmental Geography (one semester). Grades 9-12

This course will focus on the natural environment, its interpretation and management at local, national, and global scales. It will include investigation of the elements and functioning of ecosystems (air, land, water, soils, plants, and animals); and differences in perceptions of the environment and of environmental quality including issues of preservation, conservation, and the management of environmental pollution (soil, water, and air). Students will also study the problems created

Geography in the Secondary School—CONTINUED

by technological hazards such as toxic waste disposal sites, nuclear power plant malfunctions, acid rain, and problems posed by natural hazards such as flooding, earthquakes, coastal storms, and serious atmospheric disturbances.

Urban Geography (one semester). Grades 9-12

This course focuses on urban areas as dominant features of the cultural landscape with emphasis on the role of the city as the center for administrative, economic, and cultural activities, and as the focal point for metropolitan regions. Students will study how urban areas are interconnected by flows of people, goods, and ideas, and how the internal structure of individual cities and urban areas vary according to historical and cultural settings. They will also learn how massive urban concentrations have developed in various regions of the world and how their polycentric structure functions as an urban region. Case studies should include urban areas in developed and developing societies, rural to urban migration, diversity of urban populations, economic functions, and historical reasons for the locations of selected cities and their metropolitan areas.

Political Geography (one semester). Grades 9-12

Political geography examines the relationship between politics and territory. Students will study how political decisions shape the internal structures and boundaries of political units at local, metropolitan, national, and global scales. Students will also learn how natural environments, the configuration of land and water masses, distributions of population and resources, and levels of technological development influence political decisions. The course should help students understand the complex interactions among political units at different levels and across cultures. Appropriate case studies include distribution of votes in elections, political divisions in metropolitan regions, the geographical dimensions of metropolitan governments, conflicts among the world's states, and global problems whose solutions require international cooperation.

Cultural Geography (one semester). Grades 9-12

Cultural geography deals with how the activities of different culture groups affect the use, form, and personality of the landscape. It can explore a variety of themes including the human use of the habitat and its resources, the human impact on the ecology of the earth, the origin and spread of cultures, environmental perception, the geography of settlement forms, or the study of non-material culture. It is highly useful to include as much direct field observation as possible to develop a course that takes advantage of the local and regional cultural geography.

Historical Geography (one semester). Grades 9-12

Historical geography is the study of the geography of the past or of past landscapes during a particular period of history such as the historical geography of colonial America, of the Middle East during the rapid expansion of Islam, or of pre-Columbian Latin America. Other approaches might focus on historical changes in geographic patterns, for example, tracing the evolution of the American landscape

from Indian settlements to the present or studying the historical geography of Western interactions with Third World regions. Another approach might include the study of past geographies of selected cultures during important periods of their history such as the geography of the Roman Empire, ancient Egypt, or the Ottoman Empire.

Economic Geography (one semester). Grades 9-12

Economic geography deals with the study of locational factors and the processes that influence the development and distribution of economic activities. These activities include the production and consumption of goods and provision and use of services as conducted in diverse economic systems (e.g., capitalist, socialist), including formal and informal sectors, and the household. The course will address the local, regional, national, and global distribution and flow of resources, workers, and capital. Students should study the ways that decisions are made regarding the location of such economic activities as resource extraction, agricultural and manufacturing production, retailing and wholesaling of goods, the provision of public services, and the exchange of information and research innovations. Students should learn that the locations of economic activities have significant impacts on the characteristics of places and the quality of human life.

Problems in Local Geography (one semester). Grades 9-12

A course in local geography permits students to apply previously learned geographic knowledge and skills to the study of their own community. Special emphasis should be given to refinement of skills related to defining geographic aspects of local problems, collecting and analyzing data, and formulating thoughtful responses to the problems. Examples of suitable topics include the following: selection of a site for a retail store or a health care facility, analysis of the public transportation system with emphasis on its differential use by men and women, various income and age groups, and the impact of human activity on the natural landscape. Studies of migration or transportation would show the relationship of the local area to other places while examining ethnic neighborhoods, industrial zones, or commercial areas which illustrate the development of regional patterns within the local community.

Honors Courses in Geography (one to four semesters). Grades 11-12

Honors courses should offer advanced students opportunities for research on selected topics in human and physical geography. Appropriate themes include population distribution and migration, locational analysis, map reading and aerial photo interpretation, cartography and graphics, environmental impact analysis or selected regions or regional problems. Each course will include an individual or group project involving definition and design of a research topic, literature search, archival or field research, and preparation and presentation of a report.

Honors work can include an independently arranged research project on a topic decided upon jointly by the student and faculty advisor and requires close supervision during the course of one or more academic years.

Skills for High School Geography Curricula

A. Asking Geographic Questions

Geography is distinguished by the kinds of questions it asks—the “where” and “why there” aspects of a problem. It is thus important that students develop and practice skills in asking such questions for themselves.

The task can be approached by:

- 1) giving students practice in distinguishing geographic from nongeographic questions.
- 2) presenting students with an issue and asking them to develop geographic questions.

B. Acquiring Geographic Information

1. Review of skills in identifying locations
 - a) finding places on maps and in atlases using i) letter/number grid coordinates ii) latitude and longitude.
 - b) being able to identify distance/direction information from maps.
2. Observing the human and physical characteristics of places
 - a) observation in the field i) qualitative description ii) quantitative recording
 - b) observation of photographic evidence, including aerial and satellite photography i) description of elements ii) recognition of patterns.
3. Acquiring data about people's geographic activities and the human and physical characteristics of places.
 - a) Interviewing i) preparing simple questionnaires ii) identifying appropriate people to interview iii) conducting an interview
 - b) Obtaining statistical data i) basic census data (e.g. population size; age/sex/ethnic distribution; social/economic characteristics. Should include working with such measures as population density, birth rates, population pyramids and sex ratios) ii) other community statistics e.g. economic and service activities iii) seasonal and annual weather and climatic data.

C. Presenting Geographic Information

1. Developing systematic combinations and classifications of both descriptive and statistical data.
2. Preparing tables, including title and source of data and labelling categories.
3. Preparing graphs (bar, line, pie) including title and source of data and labelling categories.
4. Preparing maps using area and point data including title, scale, legend, and orientation.
5. Preparing well constructed interpretive oral and written reports to accompany maps, graphics and other geographical data.

D. Analyzing Geographic Information

1. Translating tabular and graphic information to verbal form, e.g. describing trends.
2. Interpreting maps, including point, line, and area spatial patterns and comparing spatial patterns to propose relationships.
3. Understanding that map projections distort global distances, directions, areas, and shapes.

E. Developing and Testing Geographic Generalizations

1. Inductive reasoning (synthesis of information on geographic variables).
2. Deductive reasoning (identifying relevant questions, collecting and assessing appropriate evidence).

Learning Outcomes

The learning outcomes for secondary school students repeat the five basic themes of geography mentioned earlier in these guidelines. Each theme will have varying degrees of emphasis depending upon the nature and content of the secondary school course. Thus the learning outcomes are not stated with reference to any particular course. The course descriptions in the previous sections highlight major course content and objectives and can be cross-referenced with learning outcomes under each theme.

The order in which the learning outcomes appear under each theme progresses from a fairly simple review level of learning at the lower grade levels of secondary schools to increasingly sophisticated understandings and use of geographical concepts, tools, analysis, and problem-solving at the upper grade levels. Because of the current status of geographic education in the United States, many of the learning outcomes listed here are those that require considerable review and reinforcement in introductory college level courses.

Location: Position on the Earth's Surface

Students will:

- be able to locate places using a system of mathematical coordinates in an arbitrary grid system (absolute location).
- be able to describe locations in terms of relationships with other locations (relative location).
- understand that location is a significant aspect of every activity, event, person, place, and physical and cultural feature on earth.
- be able to explain how location influences activities and processes that occur in different places.
- be able to describe how physical and cultural attributes of one location interact with attributes of other locations.
- be aware that the significance and importance of locations change as cultures change their interactions with each other and with the physical environment.
- recognize the differential rates of change in interactions between places.
- realize that knowledge of locations and their characteristics is a key factor in understanding human interdependence.
- know the locations of major water bodies and land masses.
- be able to identify and locate a large number of important places and features in many parts of the world.
- be able to use maps to ask questions about the distributions of earth features.
- be able to discuss maps as a primary geographic tool.
- be able to distinguish among various map projections and discuss how map projections distort perceptions of relationships on the earth.

Place: Physical and Human Characteristics

Students will:

- know that places are distinctive in terms of their physical and human characteristics.
- describe and interpret complex physical processes that produce the geological, biological, and other natural features of places.
- be able to relate how human activities and culture create a variety of different and similar places.
- explain how intensive human activities can dramatically alter the physical characteristics of places.
- describe ways in which people define, build, and name places and develop a sense of place.
- discuss why places are important to individual human identity and as symbols for unifying a society.
- understand how different groups in society may view places differently—for example depending on their life stage, gender, class, ethnicity, or values and belief systems.
- give examples of how humans view a single place from many perspectives—for example as a cultural center, source of an important resource, political trouble spot, or origin point of a desired product.
- give examples of how the significance and meaning of places change over time.
- realize that places can be damaged, destroyed, or improved through human actions or natural processes.

Relationships Within Places: Humans and Environments

Students will:

- describe several ways in which people inhabit, modify, and adapt culturally to different physical environments.
- know that human changes to natural settings are based on cultural appraisals and occupation.
- give examples of ways people evaluate and use natural environments to extract needed resources, grow crops, and create settlements.
- describe how the human ability to modify physical environments and create cultural landscapes has increased in scope and intensity through the use of technology.
- give examples of how human alterations of physical environments have had positive and negative consequences.
- be aware that each culture group sees different possibilities and constraints in physical environments.
- understand why humans attempt to control the quality of the natural environment and to mitigate the effects of hazardous natural events such as drought, floods, earthquakes, and hurricanes.

Movement: Humans Interacting on the Earth

Students will:

- explain why human activities require movement.
- describe ways in which people move themselves, their products, and their ideas across the earth.

- be aware that movements reflect global patterns of interaction between people in distant and near-by places.
- know that few places are self-sufficient and therefore extensive human networks of transport and communications link places together.
- know that movements are concentrated in some areas and sparse in other areas thereby creating patterns of centers, pathways, and hinterlands.
- describe how changes in transportation and communications technology influence the rates at which people, goods, and ideas move from place to place.
- discuss how over time movements have increased in speed and frequency.
- know that all cultures are inter-dependent.
- discuss how movements can be planned and organized to save energy, reduce travel time, and conserve resources.
- explain why improving ease of movement requires careful analysis to determine the best location for each human activity.

Regions: How they Form and Change

Students will:

- understand that regions are basic units of geographic study.
- describe how regions vary in scale from very small to very large.
- explain how regions may be defined by cultural or physical features or by a combination of both.
- know that region is a conceptual tool to help make general statements about complex reality.
- describe how the concept of regions relates local places in a system of interactions and connections.
- give examples of nodal and uniform regions.

Information on Careers in Geography

The Association of American Geographers and the American Congress on Surveying and Mapping publish career booklets that elaborate on the variety of educational programs available for students to prepare them for satisfying careers in geography or cartography. Write to the AAG for information on obtaining *Geography as a Discipline*, *Geography: Tomorrow's Career*, and *Careers in Geography*; and to the ACSM for *Careers in Cartography*.

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